

## Editorial: Challenges, specificities and commonalities of transport research and policy within the BENELUX countries – the case of Luxembourg

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### 1. Introduction

The papers included in this special issue of the EJTIR evolved from discussions and presentations given at the 2013 Transport Research Day of BIVEC, the 'Benelux Interuniversity Association of Transport Researchers', which took place at the University of Luxembourg in May 2013. This bi-annual event is organized in order to foster scientific exchange on related issues and offers a platform for early career researchers, most importantly PhD candidates, to present their work and receive scientific feedback. Different from the topic-wise rationale that is usually behind most other academic associations, submissions have to come from universities or representatives of the three Benelux countries: Belgium, the Netherlands and Luxembourg.

In the recent years, the Grand Duchy of Luxembourg has emerged as a new player in research as part of a strategy to foster its knowledge for both economical and societal developments. In the transport research field, the University of Luxembourg (created in 2003) with its Geography and Spatial Planning Institute (created in 2007) and its Transport Engineering group (created in 2012) joined forces with the public research institution LISER (previously CEPS-INSTED) to organize the 2013 Transport Research Day of the BIVEC. Looking backward to the event while preparing this editorial, we can see it actually played a kick-off role for the international diffusion of Luxembourg research on transport and related land-use issues, and was a good occasion to shed lights on Luxembourg specificities and commonalities within the Benelux, which we like to stress in this editorial.

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## 2. The setting: Things in common for the BIVEC area

The state-regional environment where these contributions are embedded in is characterized by a certain set of properties. These properties are also important for the role of an association such as BIVEC when responding to transport related developments and challenges. In this respect, the three Benelux countries have various aspects in common that make them distinct from other countries or regions. First of all, they are relatively small countries: by compensating for the lack of a large export base (at least compared to countries such as Germany, France or the UK, and more in line with countries such as Austria or Switzerland), small states have always revealed certain levels of connectivity and internationality in their economic specialization and socio-economic development. Historically, the case of the Netherlands is rather distinct in this respect, as the country has a long tradition as a seafarers-nation, which is still rather visible today by the economic significance of its two main-ports, Amsterdam Schiphol Airport and the port of Rotterdam; wholesale, freight distribution and logistics contribute to the economic performance quite significantly. Belgium actually does not stand far behind in this respect, given its colonial past, its role in maritime transport (the port of Antwerp being among the top-three European ports for some time now) or the role of cities such as Antwerp or Brussels as hot spots of migration and subject to a constant process of internationalization. Luxembourg, last but not least, conforms to these properties quite well, since its socio-economic development, particularly of the last three decades, is characterized by increasing levels of internationalization. After having gone through a certain trajectory of establishing a steel and iron industry in the early 20<sup>th</sup> century, its status as one of the three European headquarters and one of the top-five European financial marketplaces (close to the top-ten worldwide) can only be understood against the background of this constant process of internationalization. Also, being among the top-ten European airfreight hubs, material flows play a certain role in its economic development as well.

This also means that the notion of flows is particularly important for understanding these historical and contemporary conditions of societal and economic development, and thus for the countries' current strategies in managing this (see Hesse, 2013). The higher the specialization on wholesale and commodity trade is becoming (regardless whether these commodities are material or immaterial), the more demanding is of course the physical distribution of goods, vehicles, people and information. The associated strain on infrastructure systems is extremely high, which can be explored in various cases across the three countries, in all modes of passenger, freight and information traffic.

Smaller countries are also specific in this respect, as the related share of cross-border movements and through traffic at the regional scale tends to be higher than in big countries, with their economy being nationally and spatially more integrated. Cross-border mobility was actually the focus of the previous BIVEC special issue (see Witlox and Van Acker, 2012). Cross-border movements also mean that relatively small countries experience a disproportionately high pressure to adapt to the rising amount of transport passing through. This dilemma is perfectly illustrated by a number of planning issues, such as the neighbour conflicts between Belgium and the Netherlands as concerns the spatial expansion of the port of Antwerp; the organization of hinterland transport of the two main ports Antwerp and Rotterdam into the neighboring countries area (cf. the Betuwe- and Iron Rhine rail line issues with Germany); or the need to improve cross-border transport in the Greater Region of Wallonia, Belgium, Luxembourg, Lorraine, France, and Sarre/Rhineland-Palatinate, Germany.

The latter case is particularly challenging for Luxembourg and cross-border transport and land-use strategy are extremely present in the daily media. Every day, the Grand Duchy of Luxembourg receives about 160,000 cross-border workers, which represents 42% of the total working force in the country. Among these, 89% use the car for their home-to-work trips, while this figure reaches 76% 'only' for the residents (Carpentier and Gerber, 2009). This significant difference in terms of travel mode choice between cross-border and resident travellers for

commuting is mainly due to systematic differences in travel distances, in combination with difficulties to organize a sustainable transportation system across adjacent countries due to technical, economic but also political reasons.

This actually leads us to one of the most pressing issues across the Benelux and within each member state: the political and jurisdictional fragmentation. In all three countries, it seems increasingly difficult to develop coherent, robust approaches to the governance of infrastructure, land use and transport management. The institutional landscape between states, regions (or provinces) and municipalities is rather diverse and fragmented. In the Netherlands and Luxembourg this seems to be not as overly complex as it obviously is in Belgium, with its two regions Flanders and Wallonia, Brussels as the national capital and the German speaking community; however, conflicting objectives between the different levels of scale are prevalent and difficult to harmonize. This hinders integrated planning to become more effective, or to be implemented at all, both regarding the management of international, cross-border transport flows and also the domestic, intra-regional levels.

### **3. The framing of policies: integration issues, cluster development**

#### *3.1 Integrative planning*

The policy regimes in all countries have targeted transport and infrastructure policies, in order to improve accessibility, transport flows and related economic performances. The provision of integrated systems of transport planning and management has gained certain prominence, while spatial planning approaches also rest on the philosophy of integration, as a proper means to deal with the increasing tendency of spatio-temporal fragmentation in societies and economies.

In Luxembourg, the awareness of the role of integrated land use and transport planning for the implementation of a sustainable growth path emerged rather recently and topped up with an integrated planning concept in 2004, called 'IVL' (Integratives Verkhers und Landesentwicklungskonzept, MIAT 2004). The IVL strategy borrowed from a series of urban theories including New Urbanism (compact, mixed use development) or polycentric urban development ideas in order to achieve both higher local densities and increasing mode shifts towards public transport, as well as relieving congestion of the road infrastructure by departing from an extreme centralization locational model focused on the capital city. This strategy is not without recalling the decentralized - but clustered - scheme as well as the ABC scheme that took place in the Netherlands long ago now. Within the research project MOEBIUS (Gerber et al., 2013) a first fully operational land use and transport interaction model has been setup for Luxembourg and was used to test policy scenarios including the IVL concept. Interestingly it was found that only marginal reductions in the use of car can be expected from even extreme planning (densification) scenarios, thus emphasizing the importance of further tackling cross-border issues, public transport infrastructure supply and more fundamental changes in habits.

Since the IVL, the very recent years in Luxembourg have probably seen a stronger political focus on sustainable transport (MoDu strategy, standing for 'Mobilité Durable', MDDI, 2012), and less on emphasizing the integrative nature of planning but rather strict transport objectives.

#### *3.2 Regional clusters*

In all Benelux countries, freight and transport economies as such have been selected as means of regional economic development. The more recent strategies include attempts by Dutch, Belgian and also Luxembourgian institutions to establish local clusters of competence, with which two different goals might be possible to achieve at a time: the solution of transport problems and the contribution to added value in trade and broader economic terms. Some of these strategies unfold against a longer historical background (as it is indicative for the ports of Antwerp and Rotterdam, and also for the Brussels and Amsterdam airports, for example), and some of them are part of more recent attempts to jump on the bandwagon of transport, mobility and logistics

development strategies. Most prominently, and thus depicting from Michael Porter's concept of clusters, the assumption is that the concentration of economic activity provides a certain degree of interaction of economic actors, which - as a consequence of both close proximity and interaction - will generate further added value. Applied to the area of freight transport and logistics services, authors such as Sheffi (2013) see logistics-intensive clusters as job generators and growth machines, due to the agglomeration of specialized logistics services on the one hand and the logistics operations of other firms (retail, industry) on the other hand.

This assumption is also taken up in the Benelux countries. While the Dutch strategies of promoting 'main-port' and 'green-port'-strategies are part of a longer policy path in this respect, rather new cluster strategies can be identified in the Walloon Region and also in Luxembourg, focussing on logistics related regional development. In the former, this can be understood as an attempt to compensate for job losses that have occurred as a result of de-industrialization, and in the latter it tends to complement the service orientation of an increasingly international, exchange-oriented economy. It becomes clear that transport, mobility and logistics issues are central to the development of economy and society in countries such as those forming the Benelux, and the specific challenges caused by the positionality of these countries have brought about various policy frameworks and initiatives that are actively dealing with these issues.

If there is one example to be stressed in Luxembourg, it is the 'Cité des Sciences', the core part of a new city in Belval, next to Esch-sur-Alzette in the south of the country. The 'Cité des Sciences' will accommodate most of the University activities, all public research institutions, and potentially a number of important firms and spin-offs. Not only this is a case for the polycentric development strategy of Luxembourg and an example of an economic regeneration of former industrial site, but it is a direct attempt to establish a new economy from a knowledge cluster. This spatially explicit economic policy in turns impact on transport flows and raises mobility challenges. A recent survey among the University staff (Sprumont et al., 2014) for example pointed out to a rather unsustainable expected future mode shift, with increasing travel time distances and overall private car use. A still very much uncertain but unfortunate trap for workers that will require further integrative thoughts and setting up innovative travel demand management schemes in the form of corporate incentives, disincentives or pooling solutions.

#### **4. The role of academic exchange for knowledge production**

It is the particular understanding of bodies such as BIVIC that, by bringing researchers from different regions and a variety of disciplinary strands together, they contribute to establishing a knowledge basis that helps to better understand the phenomena studied. In some cases also, the outcome of research (e.g. in engineering) might be used to improve corporate practices or public policy. It is the very commitment of an institution such as BIVIC to connect to practical forms of knowledge generation and application. At the 2013 Transport Research Day, the conference where the papers assembled here evolved from, a special event was organized in order to link academics and practitioners and bring both sides in further exchange. While Professor David Banister from Oxford University, UK, gave a lecture on the challenges associated with transport and sustainable development, the then Minister responsible for sustainable development and infrastructures, Mr. Claude Wiseler, presented the government's strategy to foster sustainable ('soft') forms of mobility for the Grand Duchy of Luxembourg. This conversation between science and policy has set the scene for the subsequent presentation of over 60 studies at the 2013 Transport Research Day, out of which about half were complemented with a full paper.

A final selection of six papers was done for this special issue, following the thorough review process of the European Journal of Transport and Infrastructure Research editorial and review guidelines. These selected papers represent an excellent example of the research interests and priorities described in this editorial. More specifically, the papers by Fraser and Notteboom, by Pani et al. and by Lebeau et al. cover relevant research challenges in both city and maritime

logistics services. Issues in governance, in the efficiency and the sustainability of these services are investigated, also looking at differences and commonalities with other countries outside the Benelux area. The paper of Schiebel et al. is a perfect example of the additional challenges that Benelux countries must face to foster modal shifts from less sustainable modes such as the personal cars to collective modes of transport, due to the important cross-border effects. Finally the papers of Zijlsta et al. and of Sarrazin and De Smet identify new challenges in the economic and technical assessment of projects involving multiple objectives and multiple modes of transport.

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